The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method of bleaching pulp, comprising:

(a) introducing a source of magnesium ions and hydroxyl ions to a refiner;

(b) introducing a source of perhydroxyl ions to a refiner; and

(c) refining wood particulates into pulp in said refiner.

2. The method of Claim 1, wherein the source of said magnesium ions and hydroxyl ions is a slurry of magnesium oxide and water.

3. The method of Claim 1, wherein the source of magnesium ions and hydroxyl ions is added to the wood particulates prior to the refiner.

4. The method of Claim 1, wherein the source of magnesium ions and hydroxyl ions is added at the refiner.

5. The method of Claim 1, wherein the refiner is a primary refiner in a two- or multi-stage refining system.

6. The method of Claim 1, wherein a chelating agent is added to the wood particulates prior to the refiner.

7. The method of Claim 1, wherein the refiner is a secondary refiner in a two-stage refining system.

8. The method of Claim 1, wherein the source of perhydroxyl ions is hydrogen peroxide.

9. The method of Claim 1, wherein the source of perhydroxyl ions is added to the wood particulates prior to the refiner.

10. The method of Claim 1, wherein the source of perhydroxyl ions is added at the refiner.

11. The method of Claim 1, further comprising retaining said pulp within a vessel after refining for about 45 to about 120 minutes.

12. The method of Claim 11, further comprising introducing a source of perhydroxyl ions to said vessel.

13. The method of Claim 12, further comprising refining said pulp in a secondary refiner after retention in the vessel.

14. The method of Claim 13, wherein a source of magnesium ions and hydroxyl ions is added to said secondary refiner.

15. The method of Claim 14, wherein a source of perhydroxyl ions is added to said secondary refiner.

16. The method of Claim 1, wherein said pulp is a mechanical pulp.

17. The method of Claim 1, wherein said pulp is a chemical pulp.

18. The method of Claim 1, wherein said pulp is a recycled pulp.

19. The method of Claim 1, wherein said pulp has a consistency of about 3% to about 20%.

20. The method of Claim 1, wherein said pulp has a consistency of about 15% to about 50%.

21. The method of Claim 1, wherein the refiner is a low to medium consistency refiner.

22. A method of bleaching mechanical pulp in a two-stage refiner system, comprising:

(a) introducing a source of magnesium ions and hydroxyl ions to a primary refiner;

(b) refining wood particulates into pulp in said primary refiner;

(c) retaining said refined pulp within a vessel after primary refining for about 45 to about 120 minutes;

(d) introducing a source of perhydroxyl ions to said vessel; and

(e) refining said pulp in a secondary refiner after retention in said vessel to produce a bleached mechanical pulp.

23. The method of Claim 22, further comprising introducing a source of magnesium ions and hydroxyl ions to the secondary refiner.

24. The method of Claim 22, further comprising introducing a source of perhydroxyl ions to the primary refiner.

25. The method of Claim 22, further comprising introducing a source of perhydroxyl ions to the secondary refiner.

26. The method of Claim 22, wherein the bleached mechanical pulp has an ISO brightness value of about 50 to about 75 or greater.

27. The method of Claim 22, wherein the bleached mechanical pulp has a Canadian Standard Freeness value of about 60 to about 200.